

Commentary

Technique for the Systematic Examination of Colon — Rectum Specimens

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Investigation of a possible relationship between asbestos exposure and the development of colon-rectum cancer must consider that recognizable changes in the bowel mucosa may antedate the appearance of clinically apparent carcinoma. It is generally acknowledged that at least some carcinomas of the large bowel arise in a pre-existent benign neoplasm, the so-called adenoma or adenomatous polyp (1). Because of the suspected relationship between benign adenomas and carcinoma, a comparison of population groups should consider not only the presence of clinical carcinoma but also the occurrence of potentially premalignant lesions. These lesions may be small, multiple, and asymptomatic. Collection of data regarding their extent and distribution requires a careful and systematic examination of the mucosa of the large intestine.

The technique which I will describe permits a meticulous and systematic gross and microscopic examination of colon-rectum specimens so that both small and large grossly recognizable lesions as well as lesions recognized only microscopically can be studied. This technique has been used for approximately two years in the laboratory of Dr. Oscar Auerbach, Senior Medical Investigator, East Orange (New Jersey) Veteran's Administration Hospital. The technique is based on a method of tissue processing developed by Dr. Guillermo Carrera at the Ochsner Foundation Clinic in New Orleans, Louisiana. We have modified this

technique to study total colon-rectum specimens from unselected autopsies, as well as surgical specimens from patients with colon and rectal cancer.

The procedure involves the fixation, clearing, embedding and sectioning of whole specimens. Specimens are received in the formalin-fixed state and are carefully examined grossly for the presence of mucosal lesions. Lesions identified are diagrammatically mapped on a standard form and then are removed for sectioning much as a surgical pathology specimen would be. The remaining bowel specimen is then processed as a whole specimen. Following paraffin embedding the specimen is sectioned at 1 cm. intervals. Each total colon-rectum specimen yields approximately 250 microscopic sections for examination. With this technique the gross and microscopic identification of very small lesions is possible.

It is believed that such an approach to the study of the large intestine may be helpful in comparing the colon and rectum of patients who have been exposed to asbestos with appropriate control groups. In this way lesions which might antedate the occurrence of carcinoma could be studied and meaningful comparisons between groups made. Because the entire specimen is being utilized in this type of approach, tissue is also available for subsequent electron microscopic and mineralogical analyses.

REFERENCE

1. Morson, B. C., and Bussey, H. J. R. Predisposing causes of intestinal cancer. *Current Problems in Surgery*, (February 1970).

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